

**DUAL-DAMASCENE DIELECTRIC STRUCTURES
AND METHODS FOR MAKING THE SAME**

ABSTRACT OF THE DISCLOSURE

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A dielectric structure and method for making a dielectric structure for dual-damascene applications over a substrate are provided. The method includes forming a barrier layer over the substrate, forming an inorganic dielectric layer over the barrier layer, and forming a low dielectric constant layer over the inorganic dielectric layer. In
10 this preferred example, the method also includes forming a trench in the low dielectric constant layer using a first etch chemistry, and forming a via in the inorganic dielectric layer using a second etch chemistry, such that the via is within the trench. In another specific example, the inorganic dielectric layer can be an un-doped TEOS oxide or a fluorine doped oxide, and the low dielectric constant layer can be a carbon doped oxide
15 (C-oxide) or other low K dielectrics.

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